

- 5           1.     A system, comprising:  
            a mobile station; and  
            an access point that includes a first and second sectored antenna  
            combined to form an omni-directional radiation pattern.
- 10           2.     The system of claim 1, wherein the first sectored antenna  
            transmits a first tone and the second sectored antenna transmits a second  
            tone differing from the first tone.
3.     The system of claim 1, wherein the first sectored antenna  
15           transmits a first signal and the second sectored antenna transmits the first  
            signal delayed in phase from the first signal.
4.     The system of claim 1, wherein the access point further  
            includes an omni-directional antenna.
- 20           5.     The system of claim 1, wherein the mobile station includes first  
            and second sectored antennas.

5           6.     A communications network, comprising:  
            an access point having at least two omni-directional antennas, where  
the first omni-directional antenna is formed by the combination of multiple  
sectored antennas.

10           7.     The communications network of claim 6, where the  
combination of multiple sectored antennas includes a first sectored antenna  
having a sector to cover a radiation pattern of substantially 0 to 90 degrees  
and another sector to cover a radiation pattern of substantially 180 to 270  
degrees.

15           8.     The communications network of claim 7, where the  
combination of multiple sectored antennas includes a second sectored  
antenna having a sector to cover a radiation pattern of substantially 90 to  
180 degrees and another sector to cover a radiation pattern of substantially  
20   270 to 360 degrees.

            9.     The communications network of claim 6, where the  
combination of multiple sectored antennas includes first and second sectored  
antennas, the first sectored antenna having a radiation pattern of  
25   substantially 0 to 180 degrees and the second sectored antenna having a  
radiation pattern of substantially 180 to 360 degrees.

            10.    The communications network of claim 9, wherein the first  
sectored antenna transmits a first signal and the second sectored antenna  
30   transmits the first signal delayed in phase from the first signal.

            11.    The communications network of claim 6, wherein the  
combination of multiple sectored antennas includes three sectored antennas

- 5       having radiation patterns that combine to form the first omni-directional antenna.

12.     The communications network of claim 11, wherein the three  
sectored antennas include a first sector antenna having a radiation pattern  
10     of substantially 0 to 90 degrees, a second sector antenna having radiation  
patterns to cover substantially 90 to 180 degrees and 270 to 360 degrees,  
and a third sector antenna having a radiation pattern of substantially 180  
to 270 degrees.

15       13.     The communications network of claim 6, wherein the  
combination of multiple sector antennas includes four sector antennas  
having radiation patterns that combine to form the first omni-directional  
antenna.

20       14.     The communications network of claim 13, wherein the four  
sector antennas each cover a radiation pattern of about 0 degrees to 90  
degrees and are appropriately positioned to form the first omni-directional  
antenna.

25       15.     The communications network of claim 6, further including a  
mobile station that includes first and second sector antennas.

5           16. A receiver system of an access point, comprising:  
two omni-directional antennas coupled to a receiver of the access  
point, where at least one of the two omni-directional antennas is a  
combination of two complimentary placed sectored antennas.

10           17. The receiver system of claim 16, wherein the two omni-  
directional antennas allow Cyclic Delay Diversity (CDD) techniques to be  
employed.

15           18. The receiver system of claim 16, wherein the at least one of the  
two omni-directional antennas includes a first sectored antenna to transmit a  
first signal and a second sectored antenna to transmit the first signal delayed  
from the first signal.

20           19. The receiver system of claim 18, wherein the first and second  
sectored antennas in a multiband system receive interleave symbols across  
sub-bands.

25           20. The receiver system of claim 18, wherein the first sectored  
antenna or the second sectored antenna is selected for receiving the best  
mobile station signal.

30           21. The receiver system of claim 16, wherein a first omni-directional  
antenna is placed in one corner of a display for a laptop computer and a  
second omni-directional antenna is placed in another corner.

22. The receiver system of claim 16, wherein a first omni-directional  
antenna is placed along one side of a display for a laptop computer and a  
second omni-directional antenna is placed along another side of the display.